

**IN THE CLAIMS:**

Please write the claims to read as follows:

Please cancel claims 1-21 without prejudice.

1 1-21. (Canceled)

Please add new claims 22 *et seq.*:

1 22. (New) A method for use in an operator initiated graceful takeover in a computer  
2 cluster having a first and second computer, the method comprising the steps of:  
3 receiving, at the second computer, an indication that the operator has requested  
4 that the second computer take over for the first computer;  
5 requesting, from the second computer, that the first computer shut down;  
6 completing service requests at the first computer pending at the time the first  
7 computer was requested to shut down;  
8 transferring responsibilities of the first computer to the second computer; and  
9 shutting down the first computer.

1 23. (New) The method as in claim 22, further comprising:  
2 generating the indication as an operator request from within the first computer;  
3 and  
4 sending the indication from the first computer to the second computer.

1 24. (New) The method as in claim 22, further comprising: generating the indication as  
2 an operator request from within the second computer.

1 25. (New) The method as in claim 22, further comprising: refusing further service re-  
2 quests at the first computer after the first computer was requested to shut down.

1 26. (New) The method as in claim 22, further comprising: transferring access of a stor-  
2 age device for the first computer to the second computer.

1 27. (New) The method as in claim 22, further comprising: asserting, at the second com-  
2 puter, disk reservations of disks of the first computer.

1 28. (New) The method as in claim 22, further comprising: rerouting file service requests  
2 from the first computer to the second computer.

1 29. (New) The method as in claim 22, further comprising: activating, at the second  
2 computer, network interfaces and network addresses that replicate those of the first com-  
3 puter.

1 30. (New) The method as in claim 22, further comprising: initiating a countdown timer  
2 subsequent to the shut down request from the second computer.

1 31. (New) The method as in claim 30, further comprising: forcing the first computer to  
2 shut down in the event the first computer is still operating at the expiration of the count-  
3 down timer.

1 32. (New) The method as in claim 22, further comprising: detecting, at the second com-  
2 puter, the shut down of the first computer by the absence of a periodic heartbeat signal.

1 33. (New) The method as in claim 22, further comprising: storing, at the first computer,  
2 state information of the first computer prior to shutting down.

1 34. (New) The method as in claim 22, further comprising: sending periodic requests  
2 from the second computer to the first computer to remain shut down, after the first com-  
3 puter has shut down.

1 35. (New) The method as in claim 22, further comprising: requesting, from the first  
2 computer, that the second computer restore responsibilities of the first computer to the  
3 first computer.

1 36. (New) The method as in claim 22, further comprising: restoring responsibilities of  
2 the first computer to the first computer upon restart of the first computer.

1 37. (New) The method as in claim 22, further comprising: using the first and second  
2 computers as a file servers.

1 38. (New) A storage system capable of performing an operator initiated graceful take-  
2 over, the storage system comprising:

3 a first computer; and

4 a second computer having a processor to

- 5           i) receive an indication that the operator has requested that the second
- 6           computer take over for the first computer,
- 7           ii) request that the first computer shut down,
- 8           iii) allow the first computer to complete service requests pending at the
- 9           time the first computer was requested to shut down,
- 10          iv) take over any responsibilities of the first computer, and
- 11          v) allow the first computer to shut down.

1   39. (New) The storage system as in claim 38, further comprising: a processor for the  
2   first computer to i) generate the indication as an operator request, and ii) send the indica-  
3   tion to the second computer.

1   40. (New) The storage system as in claim 38, further comprising: the processor of the  
2   second computer to generate the indication as an operator request.

1   41. (New) The storage system as in claim 38, further comprising: a processor for the  
2   first computer to refuse further service requests at the first computer after the first com-  
3   puter was requested to shut down.

1   42. (New) The storage system as in claim 38, further comprising:  
2           a storage device for the first computer; and  
3           an interconnect to transfer access of the storage device for the first computer to  
4   the second computer.

1 43. (New) The storage system as in claim 38, further comprising: disks of the first com-  
2 puter, the disks to be reserved by the second computer while the first computer is shut  
3 down.

1 44. (New) The storage system as in claim 38, further comprising: an interconnect to re-  
2 route file service requests from the first computer to the second computer.

1 45. (New) The storage system as in claim 38, further comprising:  
2 network interfaces at the first computer;  
3 network addresses at the first computer;  
4 network interfaces at the second computer that replicate the network interfaces of  
5 the first computer; and  
6 network addresses at the second computer that replicate the network interfaces of  
7 the first computer, the network interfaces and addresses at the second computer that rep-  
8 licate the network interfaces and addresses of the first computer to be activated by the  
9 second computer while the first computer is shut down.

1 46. (New) The storage system as in claim 38, further comprising: a countdown timer,  
2 the countdown timer to be initiated subsequent to the shut down request from the second  
3 computer.

1 47. (New) The storage system as in claim 46, further comprising: an interconnect to  
2 force the first computer to shut down in the event the first computer is still operating at  
3 the expiration of the countdown timer.

1 48. (New) The storage system as in claim 38, further comprising: an interconnect at the  
2 second computer to detect the shut down of the first computer by the absence of a peri-  
3 odic heartbeat signal.

1 49. (New) The storage system as in claim 38, further comprising: persistent memory at  
2 the first computer to store state information of the first computer prior to shutting down.

1 50. (New) The storage system as in claim 38, further comprising: an interconnect at the  
2 second computer to send periodic requests to the first computer to remain shut down, af-  
3 ter the first computer has shut down.

1 51. (New) The storage system as in claim 38, further comprising: a processor for the  
2 first computer to request that the second computer restore responsibilities of the first  
3 computer to the first computer.

1 52. (New) The storage system as in claim 38, further comprising: an interconnect to re-  
2 store responsibilities of the first computer to the first computer upon restart of the first  
3 computer.

1 53. (New) The storage system as in claim 38, further comprising: the first and second  
2 computers are file servers.

1 54. (New) A storage system capable of performing an operator initiated graceful take-  
2 over, the storage system comprising:  
3 a first computer;

4 a second computer;

5 means for receiving, at the second computer, an indication that the operator has  
6 requested that the second computer take over for the first computer;

7 means for requesting, from the second computer, that the first computer shut  
8 down;

9 means for completing service requests at the first computer pending at the time  
10 the first computer was requested to shut down;

11 means for transferring responsibilities of the first computer to the second com-  
12 puter; and

13 means for shutting down the first computer.

1 55. (New) A computer readable media, comprising: the computer readable media con-  
2 taining instructions for execution in a processor for the method of,

3 receiving, at a second computer, an indication that an operator has requested that  
4 the second computer take over for a first computer;

5 requesting, from the second computer, that the first computer shut down;

6 completing service requests at the first computer pending at the time the first  
7 computer was requested to shut down;

8 transferring responsibilities of the first computer to the second computer; and

9 shutting down the first computer.

1 56. (New) Electromagnetic signals propagating on a computer network, comprising: the  
2 electromagnetic signals carrying instructions for execution in a processor for the method  
3 of,

4           receiving, at a second computer, an indication that an operator has requested that  
5   the second computer take over for a first computer;  
6           requesting, from the second computer, that the first computer shut down;  
7           completing service requests at the first computer pending at the time the first  
8   computer was requested to shut down;  
9           transferring responsibilities of the first computer to the second computer; and  
10          shutting down the first computer.